Notice of Allowability	Application No.	Applicant(s)	
	10/053,364	KUO ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/16/03
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ The drawings filed on 1-18-02 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 6/13/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Gregory E. Webb
Primary Examiner
Art Unit: 1751

DETAILED ACTION

Response to Amendment

1. The following action is in response to the applicant's amendments filed 12/16/2003. The examiner agrees with the applicant's arguments regarding the restriction requirement. As the examiner has found the apparatus to be allowable. The method of using this specific apparatus for the purpose of manufacturing semiconductors has also been found to be allowable. As such all originally submitted claims have been allowed.

REASONS FOR ALLOWANCE

1. Claims 1-18 are allowed.

2. The following is an examiner's statement of reasons for allowance: the closest prior art was found to be Tanaka et al (US 5,158,100), Olesen et al (US 5,996,595), and Dryer et al (US 6,021,791).

3. Tanaka teaches semiconductor fabrication including a method for cleaning semiconductors. Tanaka teaches features from the claimed apparatus and method including a hot DI water source, a chemical metering device, a chemical flow sensor, a chemical supply vessel, and a temperature sensor for controlling the chemical feed temperature.

4. Tanaka however fails to teach several of the instantly claimed features including the cold DI water supply, the cold water metering means, and the conductivity sensor for controlling the first chemical in water. It should also be noted that Tanaka does not teach the hot water source to be fluidly coupled to the process tank. Instead Tanaka teaches the hot water flowing into a

jacket of the process tank to maintain the internal temperature of the process tank. Thus the hot water does not actually enter the processing area (see figure 1 and cols. 13-14 for details).

5. Olesen also teaches devices for cleaning semiconductors and methods of their operation. Olesen teaches the process tank, a first chemical supply, a chemical flow sensor, a chemical metering valve, a supply of both hot and cold DI water, and a means for mixing the DI water.

6. Olesen however fails to teach or suggest the applicant's specific conductivity sensor for measuring the conductivity of the first chemical solution. Olesen controls the first chemical through a timing process and does not control the flow via conductivity measurements.

7. Dryer et al teaches methods and apparatus for cleaning semiconductors. Dryer however fails to teach the applicant specific use of both hot and cold DI water feeds into the process tank. Dryer further fails to teach the applicant's conductivity measurement device and the corresponding method of its use.

8. Thus the applicant's specific combination of hot/cold DI water flow into the process tank coupled with the specific means of controlling chemical flow to the process tank, namely conductivity measurements was not found in the prior art of record. Nor would such specific modifications to the prior art of record have been obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory E. Webb
Primary Examiner
Art Unit 1751

gw